thetical cohort of patients diagnosed with RRMS in the United States (US). Health states were based on the Kurtzke expanded disability status scale (EDSS) (higher EDSS scores = increased disease severity). Relapse and disease progression transition probabilities for SMA were obtained from natural history studies. Treatment effects of the immunomodulatory therapies were estimated by applying a percent reduction to the SMA transition probabilities and adjusting for neutralizing antibodies (NAbs) and treatment discontinuation. Therapy-specific data was obtained from clinical trials and long-term follow-up studies. Transitions among health states occurred in 1-month cycles for the lifetime of a patient. Costs (2005US$) and outcomes were discounted at 3% annually. **RESULTS:** The incremental cost per quality-adjusted life-year (QALY) is $258,465, $303,008, $395,686, and $310,691 for SCGA, IM-IFNβ1-a, SC-IFNβ1-a and SC-IFNβ1-b compared to SMA respectively. Sensitivity analyses showed results were sensitive to changes in utilities, disease progression rates, time horizon and immunomodulatory therapy cost. **CONCLUSIONS:** Model results indicated that the immunomodulatory therapies are both more effective and more costly than SMA in treating RRMS. Although the reported incremental cost-effectiveness ratios (ICERs) are well above $50,000/QALY, not all economic evaluations are bounded by this threshold and numerous interventions with ICERs above this threshold have been deemed valuable by patients, health care decision-makers and society. This model suggests that of the immunomodulatory therapies for MS SCGA is the most cost-effective.

PNL9

COST-EFFECTIVENESS OF TOPIRAMATE FOR MIGRAINE PREVENTION: A MANAGED CARE PERSPECTIVE

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OBJECTIVES: To estimate the cost-effectiveness of topiramate (TPM) treatment for migraine prevention versus no preventive treatment using newly available efficacy and cost data. **METHODS:** Model inputs included baseline migraine days per month (base-case: 7), treatment discontinuation, treatment response, cost of preventive therapy, cost of acute treatment per attack (medical and pharmacy services), hours of work lost per attack, and hourly wage. Model outcomes were expressed monthly and included the number of migraine days averted, disability hours, total cost of preventive and acute treatment, and lost wages. Model inputs were gathered from published literature, clinical studies of TPM in migraine prevention (double-blind and open-label extensions), and census data. Unit costs for resource use were obtained by analyzing actual payments of year 2004 medical claims from a large managed care database. **RESULTS:** TPM treatment was associated with a mean reduction in migraine days of 2.4/month, and 6.5 fewer disability hours. Acute treatment costs per patient per month (including pharmacy and medical) were $39 lower ($100 versus $139) and work loss was $65 lower ($125 versus $190) for TPM preventive arm. The incremental monthly cost per patient of TPM preventive therapy was $109. Consequently, the total cost in TPM arm was $5 higher than in no-preventive arm ($109-$39-$65); incremental total cost per migraine day averted was $2 for TPM versus no preventive therapy. Results are sensitive to the baseline migraine rate: as the rate increases, total cost of care decreases, with break-even at 7.4 migraine days/month. **CONCLUSIONS:** Economic savings (direct and indirect costs) associated with lower migraine frequency offset approximately 93% of the cost of preventive therapy, suggesting that TPM is a cost-effective treatment for migraine prevention.

PNL10

COST-EFFECTIVENESS OF MS DISEASE MODIFYING AGENTS: A MARKOV AND VALUE OF INFORMATION ANALYSIS

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OBJECTIVES: A new disease modifying agent for the treatment of MS, natalizumab (Tysabri), was introduced to the market at the end of 2004 and withdrawn in early 2005 because of two cases (one fatal) of progressive multifocal leukoencephalopathy (PML). In the event that natalizumab is reintroduced to the market, the present study was conducted to assess the cost-effectiveness of natalizumab compared to interferon beta-1a (Avonex) and no treatment. Expected value of perfect information (EVPI) and partial EVPI (PEVPI) analyses were conducted to characterize the existing uncertainty in the model parameters. **METHODS:** The main analytical technique used in this study was incremental cost-effectiveness analysis using a Markov model. Two-level Monte Carlo simulations were performed to obtain the EVPI and PEVPI estimates. Health care costs were derived from the literature. The Disability Status Scale (DSS) was used as the measure of disability; utility values were assigned to the 10 DSS disability states based on data from the literature. Cost valuations were based on the direct health-care costs associated with disease relapse and medical care in each disability state expressed in 2005 US dollars. **RESULTS:** The Markov cohort analysis returned the following costs and QALYs: No Treatment—$175,790 and 30.971 QALYs; interferon beta-1a—$830,861 and 34.391 QALYs; natalizumab—$1,076,327 and 34.497 QALYs. The incremental cost-effectiveness ratios for interferon beta-1a and natalizumab compared to no treatment were: interferon beta-1a—$191,541 per QALY gained; natalizumab—$255,399 per QALY gained. **CONCLUSIONS:** Model inputs were based on a limited number of available studies and the results should be interpreted with caution. Nevertheless, the results of this preliminary analysis suggest that treatment with interferon beta-1a is somewhat more cost-effective than natalizumab. The value of information results indicate that more information about the transition probabilities and QALY parameters are necessary to reduce the uncertainty in the model.

PNL11

COMPARING APPLES WITH WHAT: DIFFERENT INPUTS AND ASSUMPTIONS PRODUCE DIFFERENT CONCLUSIONS IN MS ECONOMIC MODELS

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OBJECTIVES: Payers in Europe and North America have different policies on coverage of multiple sclerosis (MS) disease-modifying agents (DMAs). With the introduction of Medicare Part D and in the presence of substantial variation in analytical methods used to examine cost-effectiveness (CE) of MS DMAs, an assessment of the models' features and parameters is necessary to understand and interpret the CE results for clinical practice and health policy. This study compares the results of CE models evaluating DMAs (interferon beta-1a, interferon beta-1b,

and glatiramer acetate) vs. conventional therapy for treatment of MS. **METHODS:** Search of electronic databases has identified 8 models. We evaluated the following sources of uncertainty: 1) variation in population characteristics (age, gender, country); 2) sources of data on effectiveness, costs, and health preferences; 3) modeling assumptions (choice and duration of treatment, long-term treatment effectiveness, time of treatment initiation and termination); and 4) model structure (number of health states, study horizon, and modeling software). **RESULTS:** Results for interferon beta-1a varied from cost-saving to $2,558,660 (2005 US$) per quality adjusted of life year (QALY), CE of interferon beta-1b varied from $10,629/QALY to dominated (more costly and less effective), and results for glatiramer acetate varied from $165,201/QALY to dominated. Time horizon and treatment duration varied from 2 years to lifetime. Studies with longer treatment duration reported worse (higher) CE. All studies used country-specific cost data and performed some sensitivity analyses, but only 4 models were evaluated for uncertainty. **CONCLUSIONS:** Two out of 8 models found interferons cost-effective, while glatiramer acetate was not CE based on societal standards. The differences in models' results were attributed to the lack of evidence on long-term treatment effectiveness and variation in modeling approaches. Use of DMAs could be justified for selected subpopulations, if prices were reduced, or if more information on long-term treatment effect becomes available.

PNL12

COST-EFFECTIVENESS OF ELETRIPTAN VERSUS SUMATRIPTAN: RESULTS FROM A RANDOMIZED, CONTROLLED TRIAL

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OBJECTIVE: Migraine is a chronic, episodic condition that places a tremendous burden on the health care system, employers, patients and families. This study compared the cost-effectiveness of treating a migraine with one dose of eletriptan 40 mg or sumatriptan 100 mg during a 24-hour period. **METHODS:** This study used data from a randomized, placebo-controlled trial to compare the cost-effectiveness of eletriptan 40 mg and sumatriptan 100 mg in treating acute migraine. Three effectiveness measures were compared (sustained headache response at 1 and 2 hours, and sustained pain-free response at 2 hours) over a 24-hour period in defining treatment success. The total cost of treating all evaluable patients was defined as the total cost of the triptans used by patients up to 24 hours after the first dose. The cost per successfully treated patient (CPSTP) was calculated for each of the three definitions of treatment success using the following formula: [CPSTP = Total triptan cost of treating evaluable patients/ Number of successfully treated patients] **RESULTS:** For the 1-hour sustained headache response, the CPSTP estimates were $103 (95% CI: $89–122) for eletriptan and $149 (95% CI: $126–177) for sumatriptan. For the 2-hour sustained headache response, the estimates were $48 (95% CI: $44–53) and $67 (95% CI: $60–76) for eletriptan and sumatriptan, respectively. For the 2-hour sustained pain-free response, the estimates were $90 (95% CI: $79–105) for eletriptan and $151 (95% CI: $127–181), for sumatriptan. The benefit of eletriptan 40 mg over sumatriptan 100 mg is clear for all three measures of success. **CONCLUSIONS:** The CPSTP, calculated for each effectiveness measure, was consistently lower for eletriptan 40 mg versus sumatriptan 100 mg. These results support the use of eletriptan 40 mg over sumatriptan 100 mg in acute migraine management, and can be used to assist decision makers in formulary considerations.

PNL13

WINNERS AND LOSERS: PATTERNS IN ECONOMIC EVALUATIONS OF ANTI-EPILEPTIC DRUGS

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OBJECTIVES: Examine patterns of published economic "value messages" for anti-epileptic drugs (AEDs). **METHODS:** Using literature review best practices, identified, reviewed, and abstracted data from comparative economic analyses published in English and referenced in PubMed or presented at ISPOR. For each study, documented comparators, "winners" and "losers", explanation of economic advantage (if any) study sponsor (if any), year published, country of interest, and study design. **RESULTS:** We identified 26 studies containing at least one comparative economic "value message" for an AED. A total of 57% (15) were published as manuscripts; 53% (14 of 26) were sponsored by a drug manufacturer (4 manuscripts and 10 conference abstracts); and 38% (10 of 26) were US-oriented. Of the 14 sponsored studies, Ortho-McNeil (topiramate) sponsored 6 (only 1 published; only 1 US-oriented); UCB (levetiracetam) 4; Novartis (carbamazepine, oxcarbazepine) 3; and GSK (lamotrigine) 1. With only one exception (Ortho-McNeil), sponsored studies generated positive messages for sponsors' products. The 26 studies generated 39 comparative messages. There was at least one "winning" message for 11 of the 13 AEDs studied. Topiramate was the most frequent "winner" (35% of all messages expressed economic superiority of topiramate over comparators). Lamotrigine was the most frequent "loser" (45% of all economic messages). There was at least one message showing economic superiority over lamotrigine for 7 of the 13 AEDs. For generically available AEDs, the explanation for cost savings stemmed from lower drug price, with no evidence of clinical inferiority. For levetiracetam, the explanation for cost-effectiveness stemmed from reduced seizure frequency, a better side effect profile, and improved adherence. The rationale for topiramate's economic advantages was unclear from conference abstracts. **CONCLUSIONS:** Several manufacturers of branded AEDs (Ortho-McNeil, UCB, Novartis) have produced studies describing their drug's economic value, while others have done very little work in this area. Patterns emerge in methods and comparators.

PNL14

COST-EFFECTIVENESS OF PREGABALIN AS ADJUNCT TO STANDARD THERAPY IN PATIENTS WITH REFRACTORY PARTIAL EPILEPSY

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OBJECTIVE: To assess the cost-effectiveness of pregabalin, a new add-on antiepileptic, as an adjunct to standard therapy (ST) in adult patients with refractory partial epilepsy (RPE). **METHODS:** We developed a stochastic model to estimate expected outcomes and costs over one year for a hypothetical cohort of 1000 RPE patients assumed to receive pregabalin (300 mg/d, 600 mg/d) plus ST or ST alone. Model outcomes included numbers of days free of seizures ("seizure-free [SF] days") and quality-adjusted life-years (QALYs); the latter were assumed to depend on seizure frequency and side effects. Costs included those of antiepileptics only. Number of days with